

Tutorials: Narrated, Animated, Efficient!

Blackboard-style learning at its finest.

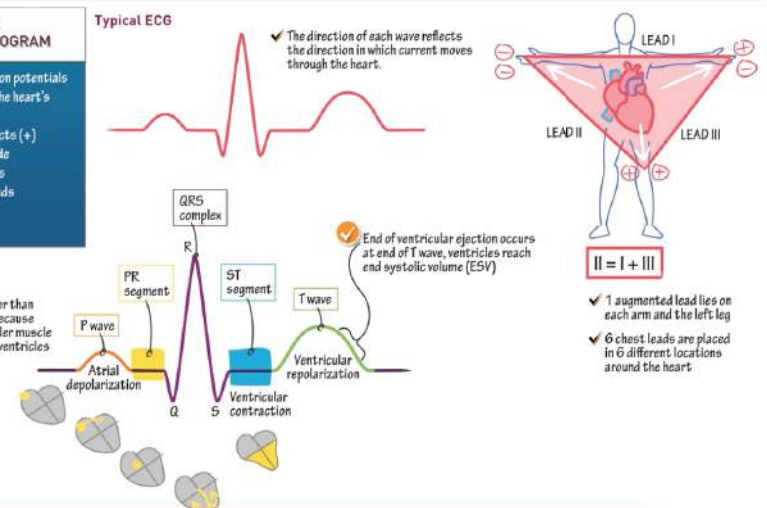
- Watch the drawings animate and see how the concepts build.
- Read along from our Notes for fast review.
- Variable Playback Speed allows you to learn at your own pace!

← Back to Course
Cardiovascular > Cardiac
Electrocardiogram

FUNDAMENTAL ELECTROCARDIOGRAM

- ✓ ECG: sum of heart's action potentials
- ✓ 12 electrodes: detect the heart's action potentials
- ✓ Lead: unseen axis, connects (+) electrode to (-) electrode
- ✓ 3 standard limb leads
- ✓ 3 augmented limb leads
- ✓ 6 chest leads

Typical ECG



✓ P wave is smaller than QRS complex because atria have smaller muscle mass than the ventricles

✓ The direction of each wave reflects the direction in which current moves through the heart.

✓ End of ventricular ejection occurs at end of T wave, ventricles reach end systolic volume (ESV)

✓ 1 augmented lead lies on each arm and the left leg

✓ 6 chest leads are placed in 6 different locations around the heart

$II = I + III$

Notes

Electrocardiogram (ECG) Notes

ELECTROCARDIOGRAM: sum of the heart's action potentials; direction of each wave on ECG reflects direction in which current moves through heart

12 electrodes: detect the heart's action potentials

12 leads: unique perspectives of heart's action potentials; connect (+) electrodes to (-) electrodes

3 standard limb leads (bipolar)

3 augmented limb leads (bipolar)

6 chest leads (unipolar)

3 STANDARD LIMB LEADS

Lead I: right arm (negative electrode) → left arm (positive electrode)

Lead II: right arm (negative electrode) → left leg (positive electrode)

⏸ Speed 1x
5:20 / 6:09

Video / Notes
Quiz
Drawing Pad



All videos 8 minutes or less!

Draw It Out

Learning that is truly active!

- Our built-in drawing pad is state-of-the-art (no accessories required).
- Pre-loaded labels for efficient learning.
- Starter image to set up your drawing.
- Check your work against our final image.

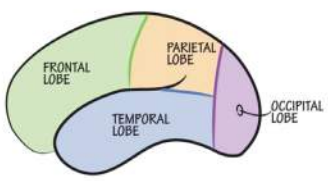
General Organization > Overview
Cerebrum

Video / Notes Quiz Drawing Pad Back to Course >

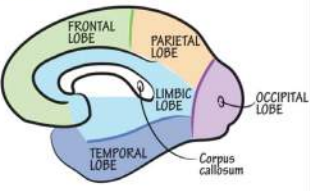
CEREBRUM

- ✓ CEREBRAL CORTEX
Outer, cellular gray matter.
- ✓ SUBCORTICAL WHITE MATTER
Axons.
- ✓ CEREBROSPINAL FLUID SYSTEM
Protects/nourishes.
- ✓ BRAINSTEM
Cranial nerves + other essentials.
- ✓ CEREBELLUM
Balance and coordination.
- ✓ CEREBRAL LOBES
Frontal lobe
Cognitive, Motor, Eye movements
Parietal lobe
Sensory processing, Spatial orientation
Temporal lobe
Language comprehension and visual identification
Occipital lobe
Visual reception and processing
Limbic lobe
Memory and emotional processing

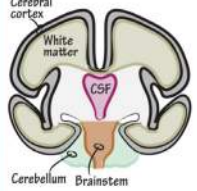
LATERAL



MEDIAL



CORONAL



Notes

Here, we will create a basic overview of the cerebrum, which includes such important structures as the cerebral hemispheres, brainstem, and cerebellum.

Start a table, so we can keep track of the various nervous system structures.

Now, draw a coronal section through the brain, so we can study the cerebral cortex and subcortical white matter.

Draw an inner layer and label the space between the layers as the cerebral cortex, which is a relatively thin shell of neuronal tissue. Denote that the cerebral cortex is the outer, cellular gray matter of the brain.

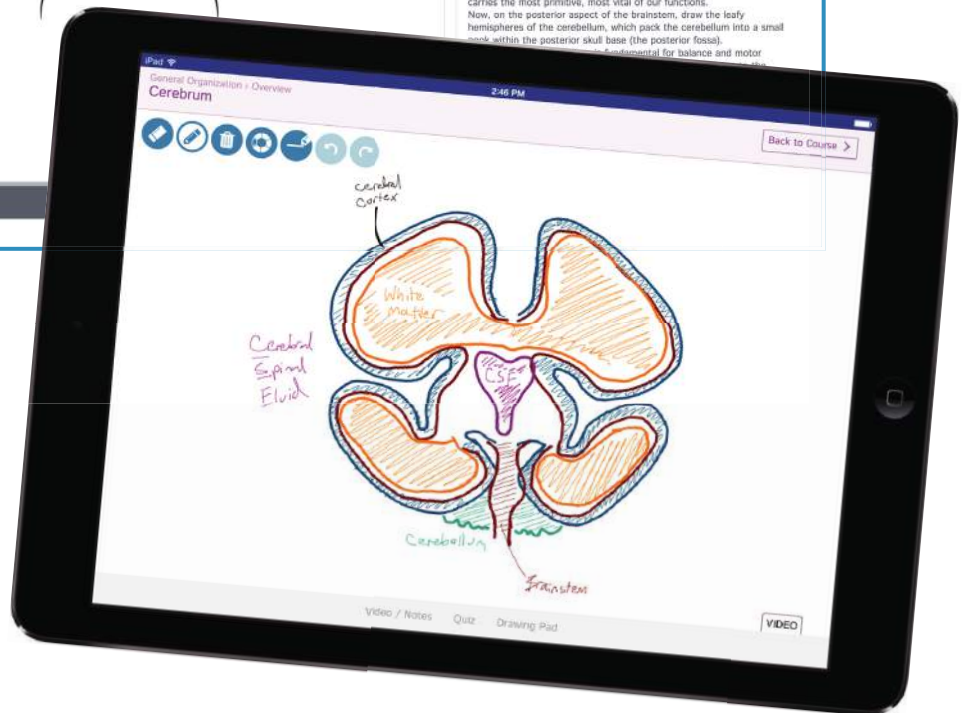
Now, draw the subcortical white matter inner to the cerebral cortex, which forms a dense core of connection fibers – much thicker than the cerebral cortex.

Denote that it comprises the underlying axons.

Next, draw the cerebrospinal fluid system within the center of the cerebrum; this system forms pockets of fluid deep in the brain. Denote that the cerebrospinal fluid assists the meninges in nourishing and supporting the nervous system with essential nutrients and metabolites.

Next, draw the brainstem, below the brain; it's the basic seat of life. Denote that the brainstem contains cranial nerve nuclei and other essential neuronal populations and fiber tracts, as such it controls and carries the most primitive, most vital of our functions.

Now, on the posterior aspect of the brainstem, draw the leafy hemispheres of the cerebellum, which pack the cerebellum into a small *nick* within the posterior skull base (the posterior fossa).



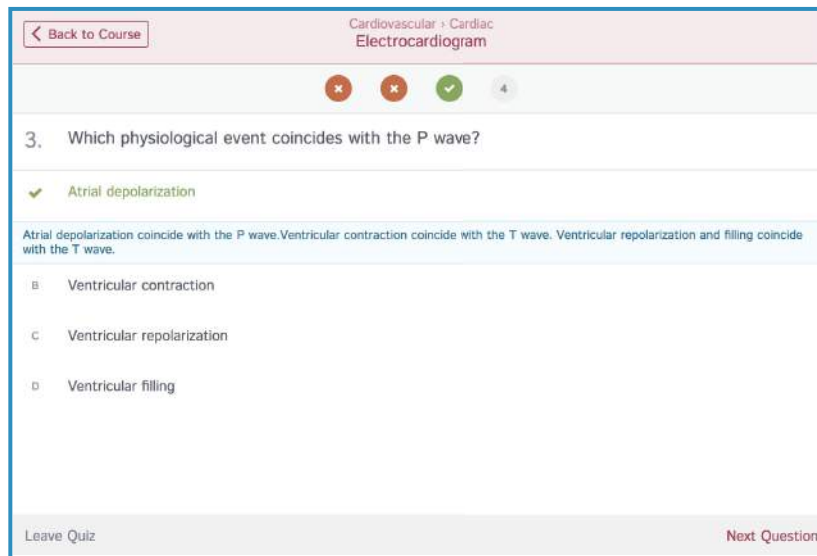
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Page 2

Quizzes and Exams

Test yourself until you know it.

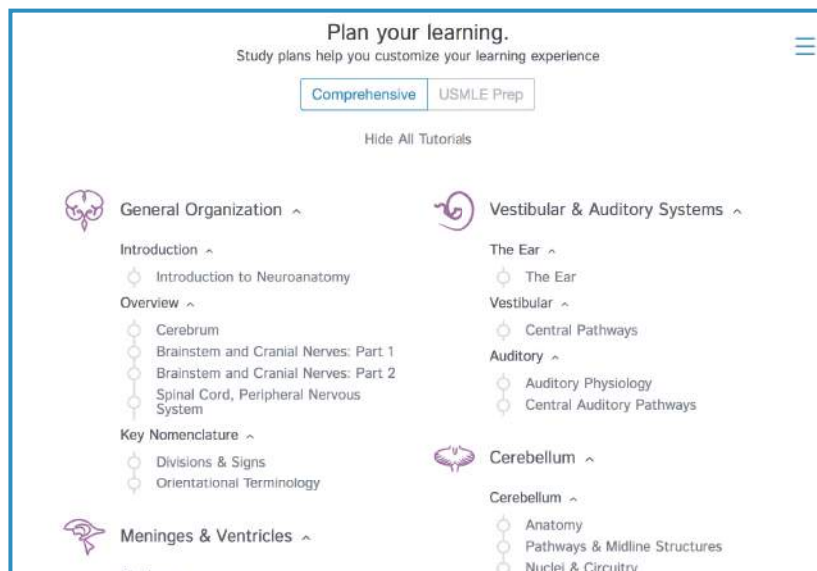
- Boost confidence with rapid-fire multiple-choice questions.
- Solidify your knowledge with our subject exams.



Tutorial Study Plans

Start with a study plan that's right for you

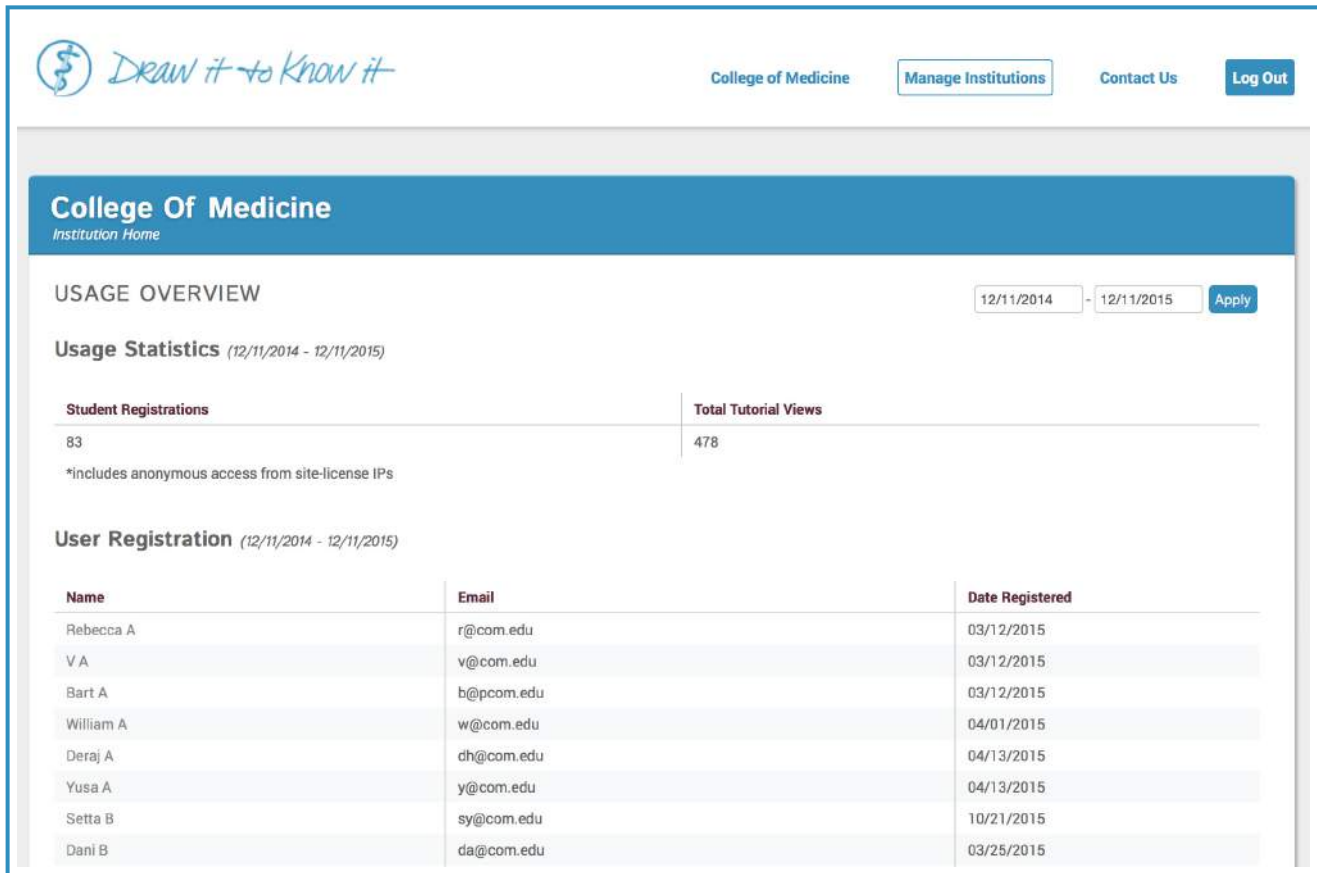
- Filter through our comprehensive tutorial list to create a study plan that's right for you.
- Professors: Create a custom study plan and share it with your class.



Institutional Reports

See how well your students are doing with our institutional reports on:

- Student registration and activity
- Tutorial views
- Quiz and subject exam scores



The screenshot shows the 'College Of Medicine' institutional report page. At the top, there is a navigation bar with the logo, 'College of Medicine', 'Manage Institutions', 'Contact Us', and 'Log Out' buttons. Below this is a blue header for 'College Of Medicine' with a link to 'Institution Home'. The main content area is titled 'USAGE OVERVIEW' and includes a date range selector for '12/11/2014 - 12/11/2015' with an 'Apply' button. Underneath, there is a section for 'Usage Statistics' for the same period, showing 'Student Registrations' at 83 and 'Total Tutorial Views' at 478. A note indicates that the registration count includes anonymous access from site-license IPs. Below this is a 'User Registration' table for the same period, listing individual users with their names, email addresses, and registration dates.

Name	Email	Date Registered
Rebecca A	r@com.edu	03/12/2015
V A	v@com.edu	03/12/2015
Bart A	b@pcom.edu	03/12/2015
William A	w@com.edu	04/01/2015
Deraj A	dh@com.edu	04/13/2015
Yusa A	y@com.edu	04/13/2015
Setta B	sy@com.edu	10/21/2015
Dani B	da@com.edu	03/25/2015